Implementing the CMMI® in a Six Sigma World

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Agenda

- Where Do These Initiatives Get Sponsored?
- Six Sigma Overview
- Components of Six Sigma / CMMI implementation – Is it collaborative or competitive?
Context

• Who typically sponsors quality programs?
  – CMMI – CIO
  – ITIL – CIO / IT Operations VP
  – Outsourcing – CFO
  – ISO / Six Sigma – Business (CEO / COO)
• Can these programs successfully co-exist?

• The key to the answer is, “what is the goal of the quality program?”
  – The program itself?
  – Better efficiency?
  – More effective business?
  – Something else?

• The underlying business objective is often
  – Misunderstood by the people responsible for the program’s implementation
  – Not appropriately reflected in the organization’s recognition/reward system
Six Sigma Overview

• Six Sigma focuses on:
  – Executive sponsorship
  – Driving out defects
  – Six Sigma = 3.4 defects per million opportunities
  – Measurable improvements
Six Sigma Overview-2

- Uses the DMAIC process to improve existing processes
  - Define what plans must be in place to realize improvement
  - Measure the business systems that support the plans
  - Analyze the gaps in system performance benchmarks
  - Improve system elements to achieve performance goals
  - Control system-level characteristics that are critical to value
Six Sigma Overview-3

- Uses the DFSS (Design For Six Sigma) process to implement new processes
  - Define robust configurations
  - Minimize absolute complexity and influence on system performance
Six Sigma Overview-4

• Subset of Six Sigma roles:
  – **Executive Management** – Sponsors (inspire, own, fund and drive)
  – **Champion** – Responsible for the development and execution of Six Sigma program
  – **Master Black Belts** – Six Sigma architects responsible for overall design, training and implementation
  – **Black Belt** – Six Sigma experts responsible for developing and leading improvement teams
  – **Process Owners** – Line managers ensuring improvements are captured and implemented
  – **Green Belts** – Extensions of Black Belt – typically work on improvement teams
  – **Project Team Members** – Support Six Sigma
IDEAL / DFSS

- Set Context
- Build Sponsorship
- Charter Infrastructure
- Characterize Current & Desired States
- Develop Recommendations
- Set Priorities
- Develop Approach
- Plan Actions
- Pilot/Test Solution
- Create Solution
- Refine Solution
- Implement Solution
- Analyze and Validate
- Propose Future Actions
- Learning
- Stimulus for Change
- Initiating
- Diagnosing
- Establishing
- Acting

IDEAL / DFSS Diagram
IDEAL / DMAIC

Define
- Set Context
- Build Sponsorship
- Charter Infrastructure

Initiating
- Characterize Current & Desired States
- Develop Recommendations
- Set Priorities
- Develop Approach
- Plan Actions

Diagnosing
- Propose Future Actions
- Analyze and Validate
- Implement Solution
- Refine Solution
- Pilot/Test Solution

Learning
- Create Solution
- Establishing
- Acting

Stimulus for Change

IDEAL / DMAIC:
- Define
- Set Context
- Build Sponsorship
- Charter Infrastructure
- Chart
- Characterize Current & Desired States
- Develop Recommendations
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- Plan Actions
- Propose Future Actions
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- Implement Solution
- Refine Solution
- Pilot/Test Solution
- Create Solution
- Establishing
- Acting

LIVERY EXCELLENCE
IDEAL / DMAIC

Improve

Set Context
Build Sponsorship
Charter Infrastructure
Charter Current & Desired States
Develop Recommendations
Set Priorities
Develop Approach
Plan Actions
Refine Solution
Pilot/Test Solution
Create Solution
Implement Solution
Analyze and Validate
Propose Future Actions

Learning

Acting

Stimulus for Change
Initiating

Diagnosing

Establishing
Collaborative Components

Many of the Process Areas (PAs) of the CMMI are required capabilities for Six Sigma, e.g.

- **MA – Measurement and Analysis**
  - Develop and sustain a measurement capability that is used to support management information needs

- **DAR – Decision Analysis and Resolution**
  - Analyze possible decisions using a formal evaluation process that evaluates identified alternatives against established criteria.

- **CAR – Causal Analysis and Resolution**
  - Identify causes of defects and other problems and take action to prevent them from occurring in the future.

- **Others**
Collaborative Components

• Many of the Process Areas (PAs) of the CMMI directly support Six Sigma, e.g.

• PP/PMC – Project Planning / Project Monitor and Control

• OPF/OPD – Organizational Process Focus / Organization Process Definition

• CM – Configuration Management

• RSKM – Risk Management

• Others
Collaborative Roles

- **Executive Management** – Sponsors

- **Champion** – Responsible for the development and execution

- **Master Black Belts / Engineering Process Group (EPG)** – Architects responsible for overall design, training and implementation

- **Black Belt / EPG** – Experts responsible for developing and leading improvement teams
Collaborative Roles-2

• **Process Owners** – Line managers ensuring improvements are captured and implemented

• **Green Belts / Process Improvement Teams** – Extensions of Black Belt / Engineering Process Group – typically work on improvement teams

• **Project Team Members** – Support Six Sigma / CMMI

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<tr>
<th>SIX SIGMA ROLE</th>
<th>CMMI ROLE</th>
<th>JOINT ROLE</th>
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Observation

• If a Six Sigma culture already exists within the organization, it may be easier to implement the Continuous Representation than the Staged.

• Six Sigma focuses on driving improvements based upon business need and measurements. This is similar in nature to how the Continuous Representation should be implemented.

• The Staged representation relies more upon the CMMI model to drive the priority for the next improvement opportunity.
Concluding Remarks

• Is implementing the CMMI within a Six Sigma culture collaborative or competitive?

• Use Six Sigma and CMMI and ??? to help focus on the business goals

• When the goal is the program, the environment quickly becomes competitive and creates a win-lose situation

• Sometimes external intervention needs to take place with executive management to put the appropriate perspective on these programs to prevent a win-lose situation or when one already exists